Final Analysis of Maximum Extent Practicable for the NPDES MS4 Permit Requirements

Frederick County Government

Office of Sustainability and Environmental Resources

Watershed Management Section

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Introduction

This document was prepared in response to the Draft Permit for Frederick County's (the County's) proposed Phase I National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) (hereinafter, Draft Permit) dated June 28, 2014 by the Maryland Department of Environment (MDE).[1] Frederick County has performed a three-part maximum extent practicable (MEP) analysis to assess the efforts and costs required to meet the conditions in the Draft Permit.[2] The document consists of I. A Permit Review for the Maximum Extent Practicable, II. A Discussion of Impracticable Tasks, and III. The Current Ability to Finance the Program. This document is submitted with Written Formal Comments from the Office of Sustainability and Environmental Resources (hereinafter, Comments). These formal comments include additional issues that have a bearing on permit compliance, such as legal and policy issues. The statutory and regulatory authority governing the MEP process is discussed in the Comments.

What is an MS4?
An MS4 is a conveyance or system of conveyances owned by a public entity designed to collect or convey stormwater and which is regulated by the NPDES permit program.

What is an MEP?
The maximum extent practicable (MEP) analysis process provides an opportunity for permittees to evaluate and establish reasonable pollutant reduction standards prior to the permit's finalization.

EPA has intentionally not provided a precise definition of MEP to allow maximum flexibility in MS4 permitting. MS4s need the flexibility to optimize reductions in storm water pollutants on a location-by-location basis. EPA envisions that this evaluative process will consider such factors as conditions of receiving waters, specific local concerns, and other aspects included in a comprehensive watershed plan. Other factors may include MS4 size, climate, implementation schedules, current ability to finance the program, beneficial uses of receiving water, hydrology, geology, and capacity to perform operation and maintenance.
64 Fed. Reg. 68722, 68754 (Dec. 8, 1999)

As the analysis below demonstrates, the County is concerned that MDE has not adequately considered the County's MEP in development of the Draft Permit. The County has analyzed the Draft Permit and determined that portions of it are not practicable, and require evaluation and revision prior to the issuance of the Final Permit. The purpose of this document is to provide an analysis of the MEP to be used by MDE to develop reasonable and achievable permit terms in the NPDES MS4 Phase I Final Permit for Frederick County.

Analysis of Current and Draft Permit Conditions

The County's current compliance efforts establish a baseline against which the Draft Permit conditions can be compared. Existing tasks are determined to be practicable. Draft permit terms are evaluated to determine if they are existing, expanded or new. New and expanded tasks are evaluated to determine if they are practicable or impracticable. The evaluative process analyzes the permit using many of the factors EPA has identified in its

[1] A copy of the Draft Permit along with the Draft Fact Sheet is attached as Appendix R.
[2] The County developed this MEP analysis based on the particular terms of the June 28, 2014 Draft Permit. This MEP analysis does not bind the County in any regard, as it is a measure of achievability based upon a review of current operational and financial capacities subject to change in the future. Furthermore, as noted above, the County may need to change its analysis and/or its legal and policy arguments in the future.

regulations as conditions that impact practicability. The County has considered the following issues in determining whether the Draft Permit is practicable:

- MS4 size
- Current ability to finance the program
- Implementation schedules
- Capacity to perform operations and maintenance
- Specific local concerns
- Conditions of receiving waters
- Impossibility
- Burdensome

The definitions of the different status classifications used by the County in this evaluation are as follows:

I. Permit Review for Maximum Extent Practicable

MEP Categories based upon EPA Factors

Several factors are identified by EPA that may affect how permit conditions are applied based on the variability among local jurisdictions, and limit the maximum extent practicable for each jurisdiction. Following is a list of the specific factors used in this analysis and evaluation of the June 2014 draft NPDES MS4 permit conditions.

MS4 Size

Certain tasks are not practicable because the size of the MS4 is improperly defined by MDE.

Current Ability to Finance the Program

Section III addresses cost issues for the overall permit, and particularly for the retrofit requirement, in great detail.

Implementation Schedules

There are certain activities that have scheduling limitations in terms of tasks that are simply not possible within the required timeframes. Certain tasks involve chronological, necessary steps. Unforeseen delays in any one step will delay subsequent steps, and result in longer timeframes to complete projects. There are also tasks that have many unknown factors at the onset, which cannot be confined to any timetable.

Capacity to Perform Operation and Maintenance

This limitation applies to permit conditions in which the facilities or practices require impracticable maintenance, particularly in the inspection and enforcement of dispersed micro-BMP practices.

Specific Local Concerns

Limits on practicability specific to Frederick County are evaluated in this category.

Conditions of Receiving Waters

Tasks requiring the MS4 permittee to meet Water Quality Standards (WQS) or Waste Load Allocations (WLA) are identified where impracticable. Note that it is also the County's position that terms that mandate that the County meet WQS or WLAs are unlawful. We have explained this in detail in the Comments.

Impossibility

Some tasks are impossible to achieve regardless of resources; many of these are also noted in the Comments as legal issues.

Burdensome

Some tasks require so much effort and cost with so little reward that they are considered impracticable given the already extraordinary requirements of the Draft Permit.

Evaluation of Specific Permit Tasks

The status of the Draft Permit tasks are classified as existing, expanded, or new. Expanded and new conditions represent an additional level of effort which may or may not be practicable.

- **Existing**: A similar condition exists in the County's current Permit. The County has programs in place to comply with the Draft Permit condition. The County will continue during the upcoming five-year permit cycle to use adaptive management to improve these programs with a goal of making them more efficient and effective.
- **Expanded**: A similar condition exists in the County's current Permit but it has been expanded in the Draft Permit. Compliance with the condition will require an additional, sometimes substantial, level of effort.
- **New**: The Permit condition is new in the Draft Permit.

Table 1 presents the sections in the Draft Permit, the status of the tasks of that section, a brief description of tasks to be completed, and the determination of practicable or impracticable. If the section is determined to be impracticable, a reason consistent with the factors above is given. Section II discusses the permit terms that are determined to be impracticable.

Table 1: Draft Permit Sections, Status, Task Descriptions, and MEP Factor

Permit Section	Status	Task Description	MEP Factor
Part I – Identification	Existing	N/A	Practicable
Part II – Definitions	Existing	N/A	Practicable
Part III – Water Quality			Legal Issues- See Comment Document
Part IV – Standard Permit Conditions			
Part IV.A – Permit Administration	Existing	N/A	Practicable
Part IV.B – Legal Authority	Existing	N/A	Practicable
Part IV.C – Source Identification			
Part IV.C .1– Storm Drain System	Existing	Maintenance of core data layers, addition of data features with new development activity, maintenance of data standards, system administration, and general oversight of GIS activities countywide. Includes storm drain digitizing from plan sets on a parcel-by-parcel basis.	Practicable
Part IV.C.2 – Industrial and Commercial Areas	New	Maintenance of core data layers, addition of data features with new development activity, maintenance of data standards, system administration, and general oversight of GIS activities countywide. Includes development of new map layers to show industrial and commercial areas.	Practicable
Part IV.C.3 – Urban BMPs	Expanded	Maintenance of core data layers, addition of data features with new development activity, maintenance of data standards, system administration, and general oversight of GIS activities countywide. Includes urban BMP project digitizing from plan sets on a parcel-by-parcel basis.	Practicable
Part IV.C.4 – Impervious Surfaces	New	Development and maintenance of core data layers, addition of data features with new development activity, development of data standards, system administration, and general oversight of GIS activities countywide. Includes mapping of footprint of impervious area on a parcel-by-parcel	Practicable

Permit Section	Status	Task Description	MEP Factor
		basis.	
Part IV.C.5 – Monitoring Locations	New	Development and maintenance of core data layers, development of data standards, system administration, and general oversight of GIS activities countywide. Includes monitoring project tracking.	Practicable
Part IV.C.6 – Water Quality Improvement Projects	New	Development and maintenance of core data layers, development of data standards, system administration, and general oversight of GIS activities countywide. Includes digitizing effort for each watershed restoration project.	Practicable
Part IV.D – Management Programs			
Part IV.D.1. a – Stormwater Management	Expanded	Implementation of an acceptable stormwater management program including within three years of permit issuance, modifying ordinances and codes identified above to eliminate impediments to, and promote implementation of, ESD to the MEP in compliance with the MD2007 Stormwater Act.	Legal issues- see Comment document
Part IV.D.1. b – Stormwater Management	Expanded	Maintaining Programmatic and Implementation Information : Track data on stormwater plans approved and exemptions issued.	Practicable
Part IV.D.1. c – Stormwater Management	Expanded	Maintaining Construction Inspection Information : Maintain construction inspection information for all ESD treatment practices and structural stormwater management facilities. Document follow-up actions.	Practicable
Part IV.D.1. d – Stormwater Management	**Expanded**	**Conduct Triennial Inspections: Conducting preventative maintenance inspections of all ESD treatment systems and structural stormwater management facilities at least on a triennial basis. Document follow-up actions.**	**Specific Local Concerns** **Capacity to Perform Operations and Maintenance**
Part IV.D.2 – Erosion and Sediment Control	Existing	Implementation of program improvements identified by MDE for delegation of E&S, conducting responsible personnel certification classes two times per year, and reporting quarterly on earth	Legal issues- see Comment document

Permit Section	Status	Task Description	MEP Factor
		disturbances greater than one acre.	
Part IV.D.3 – Illicit Discharge Detection and Elimination	**Expanded**	**Practicable: Requires annual screening of 100 outfalls, conducting annual visual surveys of commercial and industrial areas (expanded), maintaining program from spill response, program enforcement and reporting. Not Practicable: "the County shall implement an inspection and enforcement program to ensure that all discharges to and from the municipal separate storm sewer system that are not composed entirely of stormwater are either permitted by MDE or eliminated."**	**Impossibility**
Part IV.D.4 – Litter and Floatables	**New**	**Document all litter control problems, identify ways of elimination, and develop and implement an outreach campaign to reduce littering and increase recycling**	**Impossibility** **Specific local concerns** **Conditions of receiving waters**
Part IV.D.5.a-b – Property Management and Maintenance	Expanded	NPDES Stormwater General Permit Coverage: Ensure that a Notice of Intent (NOI) has been submitted to MDE and a pollution prevention plan developed for each County-owned municipal facility requiring NPDES stormwater general permit coverage.	Legal issues- see Comment document
Part IV.D.6 – Public Education	Existing	Implement a public education and outreach program to reduce stormwater pollutants.	Practicable
Part IV.E – Restoration Plans and Total Maximum Daily Loads			Legal Issues- see Comment Document
Part IV.E.1 – Watershed Assessments	Expanded	Complete watershed assessments for entire County by the end of the permit term.	Legal Issues- see Comment Document
Part IV.E.2 – Restoration Plans	**New**	**Submit an impervious surface area assessment by the end of year one. Within one year submit restoration plans with implementation schedules for meeting WLAs. Commence and complete restoration of 20% of untreated impervious area.**	**MS4 Size** **Implementation Schedules** **Burdensome** **Impossible** **Current Ability to Finance the Program**
Part IV.E.3 – Public Participation	**New**	**Develop and implement a public participation component for watershed assessments and**	**Impossibility**

Permit Section	Status	Task Description	MEP Factor
		restoration plans.	
Part IV.E.4 – TMDL Compliance	**New**	**Evaluate and document progress annually towards meeting all WLAs within the County. Reports to include complete descriptions of the analytical methodology used to evaluate the effectiveness of the County's restoration plans and how these plans are working toward achieving compliance with EPA approved TMDLs. Provide a description of a plan for implementing additional watershed restoration actions that can be enforced when benchmarks, deadlines, and applicable stormwater WLAs are not being met or when projected funding is inadequate.**	**Impossibility**
Part IV.F – Assessment of Controls			
Part IV.F.1 – Watershed Restoration Assessment	Expanded	Includes chemical monitoring, physical stream assessments, biological monitoring, Frederick County Stream Survey (FCSS), and long term restoration monitoring.	Practicable
Part IV.F.2 – Stormwater Management Assessment	Existing	The County shall continue to monitor the Peter Pan Run watershed.	Practicable
Part IV.G – Program Funding			
Part IV.G.1 – Fiscal Analysis	Existing	Annual analysis of budget needed to comply with permit terms.	Practicable
Part IV.G.2 – Adequate Program Funding	**Expanded**	**Requirement to maintain adequate program funding to comply with permit terms.**	**Current Ability to Finance the Program**
Part V – Program Review and Annual Progress Reporting			
Part V.A – Annual Reporting	**Expanded**	**The Annual Report submitted each year to MDE that documents in detail the County's work in meeting the NPDES Permit. Annual reporting is not a problem per se, but Attachment A reporting requirements are in draft.**	**Implementation Schedules**
Part V.B – Program Review	Existing	MDE will review program implementation, annual reports, and periodic data submittal on an annual basis.	Practicable
Part V.C – Reapplication for	Existing	Provides reapplication requirements.	Practicable

Permit Section	Status	Task Description	MEP Factor
NPDES Stormwater Discharge Permit			
Part VI – Special Programmatic Conditions			
Part VI.A – Chesapeake Bay Restoration by 2025	**New**	**Coordination with MDE to meet state's Chesapeake Bay TMDL Watershed Implementation Plan.**	**Impossibility**
Part VI.B – Comprehensive Planning	**New**	**Coordination with MDP to implement Water Resources Element of Comprehensive Plan.**	**Impossibility**
Part VII – Enforcement and Penalties	Existing	N/A	Practicable

II. Discussion of Impracticable Permit Tasks

The Draft Permit tasks in Table 2 below will have a significant impact on the County's ability to implement and comply with the Draft Permit conditions. They are conditions determined by the County to be *impracticable*. This section reviews each of the impracticable tasks, explains why they are not practicable, and suggests a remedy that represents the Maximum Extent Practicable.

Table 2: Impracticable Permit Tasks

Permit Section	Status	MEP Factor
Part IV – Standard Permit Conditions		
Part IV.D – Management Programs		
Part IV.D.1. d – Stormwater Management	**Expanded**	**Specific Local Concerns** **Capacity to Perform Operations and Maintenance**
Part IV.D.3 – Illicit Discharge Detection and Elimination	**Expanded**	**Impossibility**
Part IV.D.4 – Litter and Floatables	**New**	**Impossibility** **Specific Local Concerns** **Conditions of Receiving Waters**
Part IV.E – Restoration Plans and Total Maximum Daily Loads		
Part IV.E.2 – Restoration Plans	**New**	**MS4 Size** **Implementation Schedules** **Burdensome** **Impossible** **Current Ability to Finance the Program**
Part IV.E.3 – Public Participation	**New**	**Impossibility**
Part IV.E.4 – TMDL Compliance	**New**	**Impossibility**
Part IV.G – Program Funding		
Part IV.G.2 – Adequate Program Funding	**Expanded**	**Current Ability to Finance the Program**
Part V – Program Review and Annual Progress Reporting		
Part V.A – Annual Reporting	**Expanded**	**Implementation Schedules**
Part VI – Special Programmatic Conditions		
Part VI.A – Chesapeake Bay Restoration by 2025	**New**	**Impossibility**
Part VI.B – Comprehensive Planning	**New**	**Impossibility**

Part IV.D.1.d – Stormwater Management (Task: Stormwater Management Program)

Impracticable Permit Task

Permit task, Part IV.D.1.d, as quoted below exceeds the County's MEP, due to the County's **capacity to perform operations and maintenance**, and the nature of coordinating micro-best management practice (BMP)

inspections, and the **specific local concerns** associated with inspecting so many micro-BMPs dispersed over the County's large land area.

The impracticable text from the Draft Permit is as follows:

"Conducting preventative maintenance inspections, according to COMAR 26.17.02, of all ESD treatments systems and structural stormwater management facilities at least on a triennial basis."

Discussion

The County is concerned that the current and future proliferation of micro-BMPs on private property in accordance with changes in the State's Stormwater Management Act of 2007 will make inspections impracticable. The total staff time necessary to inspect properties with micro-BMPs is extensive when considering the following: the County is to inspect every stormwater feature, even those on privately-owned individual lots, every three years in addition to the inspections performed during the construction phase; the County must evaluate the performance of ESD techniques like porous pavement, parking ratios, green roofs, reinforced turf, roof drain disconnects, and so-called "micro-scale practices" that include sheetflow to conservation areas, drainage swales, micro-bioretention, rain barrels, dry wells, etc.; a single residential property might have a dozen or more such practices; multiple attempts that will likely be necessary to obtain permission of entry onto each private property; inspections of up to eight or more micro-BMPs per property; travel distance across the County to each property; verbal and written correspondence with property owners; re-inspections; and enforcement actions.

The County would like to retain flexibility to design an effective and efficient inspection program that could, for example, include inspections by the property owner (or their maintenance companies or homeowners associations) with a follow-up report to the County. This type of self-reporting is similar to that used in industrial wastewater pretreatment programs for hundreds or thousands of businesses in a locality. Furthermore, this request is consistent with COMAR 26.17.02.11, which does not provide that the county staff personally perform the inspection, but that a responsible agency shall "ensure preventative maintenance through inspection of all stormwater management systems."

Additional legal arguments regarding the statutory and regulatory requirements of this term are provided in the Comments.

MEP

The County's MEP is:

Conducting preventative maintenance inspections, or requiring that homeowners conduct preventative maintenance inspections and report the results to the County, ~~according to~~ ~~COMAR 26.17.02~~, of all ESD treatment systems and structural stormwater management facilities at least on a triennial basis.

Part IV.D.3. – Stormwater Management (Task: Illicit Discharge Detection and Elimination)

Impracticable Permit Task

A portion of Permit Task IV.D.3. is determined to be impracticable because compliance is **impossible**.

The draft text is as follows: *"The County shall implement an inspection and enforcement program to ensure that all discharges to and from the municipal separate storm sewer system that are not composed entirely of stormwater are either permitted by MDE or eliminated. Activities shall include, but not be limited to… b. Conducting annual visual surveys of commercial and industrial areas as identified in PART IV.C.2 above for discovering, documenting, and eliminating pollutant sources."*

Discussion

The task's imposition of liability for third-party behavior is discussed in the Comments.

MEP

The County's MEP is:

"The County shall implement an inspection and enforcement program ~~to ensure~~ that requires that all discharges to and from the municipal separate storm sewer system that are not composed entirely of stormwater are either permitted by MDE or eliminated, except to the extent that such discharges are exempted by Part VII.A. Activities shall include~~, but not be limited to~~… b. Conducting annual visual surveys of commercial and industrial areas as identified in PART IV.C.2 above for discovering, documenting, and ~~eliminating~~ requiring the elimination of pollutant sources."

Part IV.D.4 – Litter & Floatables (Task: Litter & Floatables)

Impracticable Permit Task

Part III.D.4 is determined to be impracticable because of **impossibility, specific local concerns** and **conditions of receiving waters**.

Discussion

The Draft Permit requires that the County "document all litter control problems and identify potential sources, ways of elimination, and opportunities for overall improvement," develop and implement a public education program to reduce littering, and evaluate and report on these efforts annually.

As explained in the Comments, the Draft Permit term as it is currently written under subpart (a) is unclear. Furthermore, regarding specific local concerns and conditions of receiving waters, the only portion of the County with a listed impairment for trash is the portion that drains to the Patapsco[3]. This area represents 28.5 acres within Frederick County, or 0.007% of the County's land area. All of the area with MS4 infrastructure in this watershed lies within the State Highway Administration's or the Town of Mount Airy's MS4 boundary.

MEP

The County's MEP is:

[SECTION ELIMINATED]

[3] Maps containing the portion of the County in the Patapsco drainage are in Appendix S.

Part IV.E.2 – Restoration Plans (Task: Implementation & Tracking of Restoration Efforts)

Impracticable Permit Task

Part IV.E.2 is determined to be impracticable due to multiple factors, including: (1) **MS4 Size:** how the MS4 boundary is defined in the Federal Register versus how it is defined in MDE *Stormwater Accounting Guidance* versus MDE Science Services Administration's (SSA) MS4 definition used for the WIP; (2) **Impossibility:** the requirement to Retrofit MS4 Areas outside of County control; (3) **Implementation Schedules** for development of watershed assessments described in IV.E.1 are incompatible with restoration plans described in IV.E.2; (4) A **Burdensome** impervious area accounting methodology in the *Stormwater Accounting Guidance* that is inconsistent with the Bay Program; (5) **Burdensome** restoration requirements by era in Stormwater Accounting Guidance that are inconsistent with the Phase I and II WIPs and require restoration on approved practices; (6) the *Stormwater Accounting Guidance* that is used as **Burdensome** regulation without following the Administrative Procedures Act; (7) the *Stormwater Accounting Guidance* is incorporated by reference but subject to future changes that could affect the **Current Ability to Finance the Program**; and (8) omission of the Equivalency concept from the WIP in the Draft Permit that allows for cost savings from trades and affects the **Current Ability to Finance the Program**.

The impracticable text from the Draft Permit is as follows: *"2. Restoration Plans*

a. Within one year of permit issuance, Frederick County shall submit an impervious surface area assessment consistent with the methods described in the MDE document "Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated, Guidance for National Pollutant Discharge Elimination System Stormwater Permits" (MDE, June 2011 or subsequent versions). Upon approval by MDE, this impervious surface area assessment shall serve as the baseline for the restoration efforts required in this permit.

By the end of this permit term, Frederick County shall commence and complete the implementation of restoration efforts for twenty percent of the County's impervious surface area consistent with the methodology described in the MDE document cited in PART IV.E.2.a. that has not already been restored to the MEP. Equivalent acres restored of impervious surfaces, through new retrofits or the retrofit of pre-2002 structural BMPs, shall be based upon the treatment of the WQv criteria and associated list of practices defined in the 2000 Maryland Stormwater Design Manual. For alternate BMPs, the basis for calculation of equivalent impervious acres restored is based upon the pollutant loads from forested cover.

b. Within one year of permit issuance, Frederick County shall submit to MDE for approval a restoration plan for each stormwater WLA approved by EPA prior to the effective date of the permit. The County shall submit restoration plans for subsequent TMDL WLAs within one year of EPA approval. Upon approval by MDE, these restoration plans will be enforceable under this permit. As part of the restoration plans, Frederick County shall:

i. Include the final date for meeting applicable WLAs and a detailed schedule for implementing all structural and nonstructural water quality improvement projects, enhanced stormwater management programs, and alternative stormwater control initiatives necessary for meeting applicable WLAs;

ii. Provide detailed cost estimates for individual projects, programs, controls, and plan implementation;

iii. Evaluate and track the implementation of restoration plans through monitoring or modeling to document the progress toward meeting established benchmarks, deadlines, and stormwater WLAs; and

iv. Develop an ongoing, iterative process that continuously implements structural and nonstructural restoration projects, program enhancements, new and additional programs, and alternative BMPs where EPA approved

TMDL stormwater WLAs are not being met according to the benchmarks and deadlines established as part of the County's watershed assessments."

Discussion

Part IV.E.2 of the Draft Permit establishes requirements for the development of restoration plans and completion of restoration efforts to treat 20% of the County's untreated impervious area. The Draft Permit references MDE's "Accounting for Stormwater Wasteload Allocations and Impervious Areas Treated, Guidance for National Pollutant Discharge Elimination System Stormwater Permits (MDE, June 2011 [draft] or subsequent versions)"[4] document, or the *Stormwater Accounting Guidance*. The *Stormwater Accounting Guidance* document (final version issued August 2014) defines the MS4 boundary according to the MDE Water Management Administration (Stormwater Program) version that is echoed in the Draft Fact Sheet, establishes the concept of stormwater by era, creates restoration liabilities for all pre-2002 development, and creates the concept of the impervious acre.

MS4 Boundary Definition

The boundary definition in the Draft Permit is impracticable because it improperly defines the **MS4 size.** Though federal regulations contain a definition of MS4, MDE has used two different descriptions, neither of which is consistent with the federal definition. The following sections evaluate each description and establish the geographic area to be regulated by each. The size and location of the MS4 has a direct bearing on the scope of the requirement to treat 20% of the County's untreated impervious area, and therefore the cost to comply with the Draft Permit. The three MS4 descriptions are as follows:

A. <u>MS4- Federal Register Defined</u>

The definition of an MS4 in the Code of Federal Regulations is as follows:

"Municipal separate storm sewer means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

i. Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;

ii. Designed or used for collecting or conveying storm water;

iii. Which is not a combined sewer; and

iv. *Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2".*[5]

A map of the MS4 that meets this definition is Appendix T. MS4 Boundary Maps: Figure 1. MS4- Federal Register Defined.

Discharges within the County's jurisdictional boundary but outside of the area served by the MS4 are not regulated by the Permit. Areas without a publicly owned municipal discharge component, by definition, are not part of the regulated municipal storm sewer system. Per the federal regulations:

[4] Accounting for Stormwater Wasteload Allocations and Impervious Areas Treated, Guidance for National Pollutant Discharge Elimination System Stormwater Permits. MDE, August 2014 is attached as Appendix U.
[5] 40 CFR 122.26(b)(8).

"(6) Non-municipal separate storm sewers. For storm water discharges associated with industrial activity from point sources which discharge through a non-municipal or non-publicly owned separate storm sewer system, the Director, in his discretion, may issue: a single NPDES permit, with each discharger a co-permittee to a permit issued to the operator of the portion of the system that discharges into waters of the United States; or, individual permits to each discharger of storm water associated with industrial activity through the non-municipal conveyance system. (i) All storm water discharges associated with industrial activity that discharge through a storm water discharge system that is not a municipal separate storm sewer must be covered by an individual permit, or a permit issued to the operator of the portion of the system that discharges to waters of the United States, with each discharger to the non-municipal conveyance a co-permittee to that permit."

The definition makes clear that conveyances associated with industrial activity that are privately owned, which do not discharge to the municipal MS4, should be permitted on their own terms. It stands to reason that any property under private ownership that does not discharge to the municipal MS4 should be similarly treated. A classic example would be a Walmart that drains directly into a river system and bypasses the municipal MS4.

Moreover, areas without any conveyances should be excluded from the MS4 permit regulated area. EPA deliberately set the boundaries of the MS4 to include only those areas with stormwater facilities in place. The County contains both urban and rural areas that may have no stormwater facilities or systems that feed into the municipally-owned MS4. These areas may have sheet flow and/or natural channels that convey runoff. It is inappropriate and contrary to federal law to apply federal requirements for stormwater management to these areas.

This is the area that is legitimately regulated. However for the purposes of restoration, some portions of this service area include privately-owned drainage; although it is part of the service area ad the regulated envelope, the county is limited in its ability to mandate restoration on this private property. For this reason, we have calculated the untreated acreage that can be included in potential restoration goals based on county owned facilities. A discussion of this methodology and acreage is provided in "Requirement to Retrofit MS4 Areas outside of County Control" below. As explained below, the conclusion is that the county can only commence and complete restoration of 416 acres, or 13.5% of the MS4- Federal Register Defined County-Owned Map.

B. <u>MS4- MDE Stormwater Program Defined</u>

MDE Stormwater Program's MS4 boundary description is provided at page 3 of the Draft Fact Sheet:

"Maryland has historically considered the entire geographic area within the political boundaries of a Phase I NPDES municipal stormwater jurisdiction as the regulated permit area. Since the inception of the NPDES municipal stormwater program, MDE has considered permit coverage to be jurisdiction-wide. This approach considered the fact that specific permit provisions, such as erosion and sediment control and stormwater management programs, are administered under State statute and as county-wide requirements. As an example, private development requires approval from the Frederick Soil Conservation District (SCD) for erosion and sediment control and the County for stormwater management, and is subsequently inspected, maintained, and enforced under local authority. Most jurisdictions also own or operate a comprehensive road system throughout the entire county that generates stormwater discharges. In this context, the entire jurisdiction can be viewed as the regulated permit area. Finally, as part of its preamble discussing the issue, EPA suggested that permit coverage may include areas where jurisdictions have control over land use decisions. Therefore, MDE defines

regulated permit area as jurisdiction-wide and considers all provisions of this permit to apply to the geographic area of the County."

MDE has not historically equated the entire geographic area within the Political Boundaries of a Phase I as the regulated permit area; furthermore, this interpretation clearly is not consistent with federal law. In the Phase II MS4 rulemaking, EPA eloquently stated that "today's rule does not regulate the county, city, or town. Today's rule regulates the MS4."[6] The Federal MS4 permitting program specifically regulates the discharges from a municipal separate storm sewer system and not the jurisdiction.[7]

In the Federal Register, EPA acknowledges "legal and land use authority" as a litmus test for having the "ability to perform the functions of permit applicant and permittee". It gives the example that:

"State highways or flood control districts, which may have no land use authority in incorporated cities, will be co-permittees with the city which does possess land use authority. EPA envisions that permit conditions for these systems will be written to establish duties that are commensurate with the legal authorities of a co-permittee. For example, under a permit, a flood control district may be responsible for the maintenance of drainage channels that they have jurisdiction over, while a city is responsible for implementing a sediment and erosion control ordinance for construction sites which relates to discharges to the drainage channel."[8]

Permittees are not given new abilities with these permits, rather, they must use their existing regulatory authority in the service of the permit. The permit itself states in Part VII H. Property rights that *"the issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, State, or local law or regulations. "*

MDE includes areas of drainage from non-municipal, private systems and areas with no storm sewer. Per federal law, areas within the jurisdictional boundary but outside of the municipal separate storm sewer system would not be regulated by the Permit. This becomes important as MDE attempts to have the permittee regulate discharges and conduct expensive restoration outside of the regulated MS4. Developed land subject to sheetflow with no conveyances should not be regulated under the Permit (the Clean Water Act only regulates point sources; there is no federal authority to regulate disperse sheet flow that is not captured by a storm sewer system and discharged through a point source), nor should storm sewer systems composed entirely of private discharges (they are not a part of the MS4 by EPA's definition above).

MDE states on page 3 of the Fact Sheet that *"any federal, state, municipal, or industrial properties that are defined in CFR as municipal separate storm sewer systems or industrial stormwater dischargers must obtain separate NPDES general stormwater permit coverage from MDE…these areas shall be subtracted from the County's regulated permit area."*

[6] 64 Fed. Reg. at 68750.
[7] The MS4 program regulates **discharges**. This is clear from EPA's "Stormwater Frequently Asked Questions:" "What kinds of stormwater **discharges** are required to have NPDES stormwater permit coverage? The NPDES stormwater permit regulations, promulgated by EPA, cover the following classes of stormwater **discharges** on a nationwide basis…" (available at http://cfpub.epa.gov/npdes/faqs.cfm?program_id=6).
[8] 55 Fed. Reg. at 47990.

MDE's expectations for municipal stormwater permittees have increased significantly over the last few years. Using the permit to extend federal jurisdiction to areas outside the MS4 service area creates a risk that an MS4 permittee may be subject to federal enforcement and citizens' suits in areas that do not drain to the municipal MS4. Developed land subject to sheetflow with no conveyances should not be regulated under the Permit, nor should storm sewer systems composed entirely of private discharges. This issue is highlighted by MDE's requirement to restore 20% of the untreated urban impervious area in the permit area, discussed later in the document.

Frederick County GIS staff followed the instructions in the fact sheet to develop a map of the MS4 that meets MDE's Stormwater Program definition, attached as Appendix T, Figure 3. MS4- MDE Stormwater Program Defined.

MS4- WIP Defined

MDE's Science Services Administration (SSA), which oversees the development and implementation of total maximum daily loads (TMDLs) such as the Chesapeake Bay TMDL and their associated WLAs, used yet another definition for the regulated municipal MS4 boundary for the development of loads and reduction targets for Maryland's Watershed Implementation Plan for the Chesapeake Bay TMDL. The MDE SSA MS4 definition in the WIP (MS4- WIP Defined) identifies areas of the County as either "NPDES regulated" or "NPDES non-regulated." Contrary to MDE Stormwater Program's MS4 definition, the SSA's Watershed Implementation Plan (WIP) for Frederick County published March 31, 2012, contains nonregulated urban developed area in the jurisdictional boundary but outside of the MS4. The June 26, 2012 version of SSA's Maryland Assessment Scenario Tool (MAST) shows 14,481 nonregulated developed acres in Frederick County.

In the *"Urban Regulated" vs. "Urban Non-Regulated" Land*[9] document that was provided by MDE SSA on its FTP site in 2012, MDE describes its process to define the MS4 and restoration obligations. MDE SSA states the following:

"The 'NPDES regulated stormwater' areas within a county are defined as the urban areas draining to a stormwater collection system owned and operated by a county… Our delineation of these areas is based on the intensity of development within the designated urban land use areas. In terms of the GIS delineation of these areas, we primarily used a combination of the 'core' urban areas from the Phase 5.3.2 land cover and the 'urbanized areas' from the U.S. Census data to distinguish between NPDES regulated and non-regulated.

Very low-density residential and rural residential urban land areas generally lie beyond the reach of a county's storm sewer system and are thus considered as 'non-NPDES regulated stormwater' areas (sometimes called 'urban non-regulated')."

MDE's SSA definition of the MS4 boundary is used to establish nutrient reduction targets in the Chesapeake Bay TMDL WIP. These targets are referenced in Draft Permit sections Part IV.E and Part V.A, wherein MDE attempts to tie the County's success in meeting TMDL targets directly to permit compliance.

A map of the MS4 that meets this definition was also retrieved from the FTP site in 2012 and is Appendix T. Figure 4. MS4- WIP Defined. The WIP Program Defined MS4 contains the following:

[9] "Urban Regulated" vs. "Urban Non-Regulated" Land document and accompanying map from MDE are in Appendix V.

- Total Acres: 48,826
    - Pervious Acres: 42,688
    - Untreated Impervious Acres: 3,633
    - Treated Impervious Acres: 2,505

Strikingly, MDE SSA no longer shares this map and instead offers a map showing the entire jurisdictional boundary under the "Stormwater Delineations: NPDES-Regulated Stormwater Systems" link retrievable from its TMDL Data Center as of September 28, 2014[10]. This map is included as Appendix W. The map appears to be consistent with the MDE Stormwater Program Definition that is in the Draft Fact Sheet. The information available about this map follows:

"This polygon shapefile represents MDE's estimate of total property area (i.e., storm sewer ownership) covered under NPDES regulated (permitted) stormwater entities statewide. The file does not represent land-cover within the polygons, rather it represents storm sewer ownership. Only urban pollutant loads are regulated under NPDES stormwater permits, so only the loads from these areas are included in the WLA. Therefore, there could be forested areas associated within an MS4 permit polygon, which are associated with the LA for a TMDL, rather than the WLA. The regulated stormwater permits/entities in this polygon file relate to WLAs in the applicable query via the MS4/regulated stormwater entity name, permit type, or possibly NPDES permit number."

This new map demonstrates that MDE has not historically considered the boundary of the MS4 to be jurisdiction-wide; rather, this is a recent phenomenon. The new map is not consistent with the methods MDE used to determine TMDL loads and reductions for the MS4. The map is not consistent with the Clean Water Act.

C. Comparison

As illustrated in below in Table 3, the amount of geographic area contained within the MS4 boundary for each definition varies substantially. Table 3 demonstrates that the overall acres for the MS4- MDE Stormwater Program Defined and MS4- WIP Defined boundaries far exceed those of the MS4- Federal Register Defined in almost every category. The MS4- MDE Stormwater Program Defined boundary more than doubles the number of acres within the MS4 boundary. The MS4- WIP Defined boundary increases the size of the MS4 by over 50%. Furthermore, as illustrated in the maps in Appendix T, Figures 1, 3, and 4, the portions of the county covered by the MDE Stormwater Program Defined and MS4- WIP Defined boundaries are wildly inconsistent with the MS4- Federal Register Defined boundary.

Table 3: Comparison of Acres in Different MS4 Definitions

Acres in MS4 Boundary	MS4- Federal Register Defined Acres	MS4- MDE Stormwater Program Defined Acres	MS4- WIP Defined Acres
Total Acres	31,582	64,663 (33,081 more than Federal Register)	48,826 (17,244 more than Federal Register)
• Pervious Acres	25,402	55,149 (29,747 more than Federal Register)	42,688 (17,286 more than Federal Register)

[10] http://www.mde.state.md.us/programs/Water/TMDL/DataCenter/Pages/TMDLMaps.aspx

• Untreated Impervious Acres	3,604	6,747 (3,143 more than Federal Register)	3,633 (29 more than Federal Register)
• Treated Impervious Acres	2576	2,767 (191 more than Federal Register)	2,505 (71 less than Federal Register)
○ Impervious Acres Treated Pre-1985	138	149	
○ Impervious Acres Treated 1985-2001	2044	2181	
○ Impervious Acres Treated 2002-2010	391	434	
○ Impervious Acres Treated Post-2010	2	3	

Requirement to Retrofit MS4 Areas outside of County Control

The requirement to retrofit areas outside of County control is impracticable because of **impossibility.** One Draft Permit has been issued for all discharges to the MS4 owned or operated by Frederick County Government within Frederick County's jurisdictional area; however, Frederick County only owns a portion of the MS4 covered by this Draft Permit. Furthermore, Frederick County's authority to demand retrofits on private property is limited. In CFR, EPA notes that permit conditions for MS4 owner/operators *"will be written to establish duties that are commensurate with the legal authorities of a co-permittee. For example, under a permit, a flood control district may be responsible for the maintenance of drainage channels that they have jurisdiction over, while a city is responsible for implementing a sediment and erosion control ordinance for construction sites which relates to discharges to the drainage channel."*[11] This becomes important as MDE attempts to have the permittee conduct restoration outside of the portion of the MS4 boundary owned and operated by Frederick County. Being the permittee and the primary operator does not equate to being its sole owner. The Draft Permit states that it "can not authorize any injury to private property or invasion of personal rights." The Draft Permit is derived from federal regulations that establish requirements based upon on authority that the County has, such as development and redevelopment requirements that are explicitly mentioned. The County does not have the ability to force retrofits on property built in compliance with past standards. Thus, requiring retrofits of private property beyond development and redevelopment is outside the authority of federal law.

A map of the MS4 that meets the Draft Permit definition, MS4- MDE Stormwater Program Defined, is inappropriately used by MDE's Stormwater Program to define the retrofit obligation. The total impervious acreage in the "MS4- MDE Stormwater Program Defined" that is considered untreated in the *Stormwater Accounting Guidance* document is 9,078 acres. 20% of this area is 1,815 acres.

The map in Appendix T Figure 2– MS4: Federal Register Defined – County Owned illustrates the portions of the MS4 based on the federal definition that are also County-owned for the purposes of determining the County's Maximum Extent Practicable restoration obligation. This boundary was developed by using the geographic area included in Figure 1 as the baseline and then removing all areas where the county does not have the authority to carry out restoration. The areas meeting the following criteria comprise the MS4 boundary for county-owned:

[11] 55 Fed. Reg. at 47990.

1. All County-owned properties minus those covered by industrial discharge permits; and
2. The structures and drainage areas to any County-owned or operated infrastructure (i.e. roads, BMPs, storm drain inlets, etc.).

The Federal-Register Defined MS4 boundary – County Owned within Frederick County contains the following:

- Total Acres: 13,014
  - Pervious Acres: 8,829
  - Untreated Impervious Acres: 3,042 (considered untreated in Phase I and II WIP)
  - Treated Impervious Acres: 1143
    - Pre-1985: 41 (considered untreated in Phase I and II WIP)
    - 1985-2001: 905
    - 2002-2012: 195
    - Post 2010: 2

The total impervious acreage for "MS4: Federal Register Defined – County Owned" that is untreated or treated before 1985 is 3,083 acres. 20% of the total impervious acreage for "MS4: Federal Register Defined – County Owned" that is untreated as required in the WIP is 617 acres.

Implementation Schedule for the Development of Restoration Plans

The County's Draft Permit mandates that the County submit a restoration plan within one year of Permit issuance to address approved TMDLs; this impracticable due to **implementation schedules**. The timeframe for preparing the kind of restoration plan envisioned by MDE is wholly inadequate, and would set the County up for failure. In particular, the reqiuirements to *"i. Include the final date for meeting applicable WLAs and a detailed schedule for implementing all structural and nonstructural water quality improvement projects, enhanced stormwater management programs, and alternative stormwater control initiatives necessary for meeting applicable WLAs; [and] ii. Provide detailed cost estimates for individual projects, programs, controls, and plan implementation"* are not feasible to execute in a single year.

The County has made suggestions regarding ways to address these concerns (see the County's legal and policy arguments in the Comments).

If the text remains as is, the County believes that it will be impossible for it to complete the type of restoration plan called for by the Draft Permit within a year. The 14 Stormwater WLAs that are applicable to Frederick County are provided from MDE's TMDL Data Center, retrieved on September 2014 and presented in Appendix X. There is simply too much work to do over too short a timeframe.

Impervious Area Accounting Methodology in the Stormwater Accounting Guidance

The requirement to use the impervious area methodology outlined in the *Stormwater Accounting Guidance* is impracticable because it is **burdensome.** The *Stormwater Accounting Guidance* in Appendix U converts acres of Chesapeake Bay Program-approved watershed restoration into MDE Stormwater Program-approved impervious acres. The County has numerous concerns with the policy implications of this document, and it believes that the document will prevent implementation of cost-effective practices.

The document reduces credit from restoration practices. For example, the Chesapeake Bay Program counts an acre of urban forest buffers as one acre of land conversion from the urban land use to forest, plus an additional acre of urban land treated with a forest efficiency. The standards from MDE count an acre of planting as 34% of one impervious acre treated, requiring 2.9 acres to be planted for every acre credited. The County would have to perform six times the tree planting it performed in its previous Permit to get credit in the next permit cycle using this guidance. In order to treat 20% of the untreated urban impervious area with tree planting, the County would have to actually plant trees on the equivalent of 59% of that land area. Implementation of these otherwise cost-effective practices becomes less desirable and implementation of the restoration requirements more costly. Frederick County believes that significantly more implementation can occur within the MEP if the state reconsiders its accounting for impervious area treatment. There is a substantial loss of credit between Draft Permit Acres and Draft Permit Impervious Acres columns due to the multiplier in the *Stormwater Accounting Guidance* Conversion column. The County is conducting a study with The Nature Conservancy to determine Eco-hydrologically Active flowpaths leading into and out of urban drainages; natural infrastructure practices in these areas also address urban impacts and restore water quality in key areas of the landscape for environmental protections. We would like to propose that these areas at minimum get 1:1 credit for acres planted.

Retrofit Requirements by Era in the Stormwater Accounting Guidance

The stormwater by era requirement in the *Stormwater Accounting Guidance* is deemed impracticable because it is **burdensome** and in some cases, **impossible**. MDE's Phase I and Phase II WIP strategies for the Chesapeake Bay TMDL apply the restoration requirement to "pre-1985 impervious cover."[12] MDE's Stormwater Program has decided that only those facilities built after 2002 are deemed treated to the MEP for purposes of determining the number of impervious acres that must be restored, according to the *Stormwater Accounting Guidance* in Appendix U. In this document, MDE applies the restoration requirement to pre-2002 impervious cover as well as areas with no stormwater management that are outside of the federally defined MS4 boundary. This is inconsistent with the state's Phase I and Phase II WIP policies.

The County disagrees with requiring restoration on stormwater facilities approved prior to 2002 that were designed to the MEP standard at the time of approval. This means that a development built prior to 2002 that met the stormwater requirements at the time of approval would be subject to the 20% restoration requirement in the Draft Permit. The restoration task requires the County to exercise an authority it does not have to force previously developed and therefore grandfathered private lands to conduct restoration outside of a development or redevelopment scenario. Federal law is careful to limit requirements to the permittee's existing authority to control discharges. It is inappropriate to "re-write history" and require the County to revisit these determinations.

Stormwater Accounting Guidance Inappropriately Used as Regulation

The use of the *Stormwater Accounting Guidance* is deemed to be impracticable because it is **burdensome**. The *Stormwater Accounting Guidance* in Appendix U is being used to establish regulatory requirements, but has not received formal peer review, and, most importantly, has not had an adequate public rulemaking process.

[12] Final Phase I WIP at ES-15; Final Phase II WIP at App. A-10.

Stormwater Accounting Guidance Changes Can Affect Compliance

It is possible, and even likely, that the Stormwater Accounting Guidance will change midway through the permit term. This is considered to be impracticable because it can affect the **current ability to finance the permit**. The *Stormwater Accounting Guidance* in Appendix U is dated August 2014. The explicit Draft Permit requirement to use this document or "subsequent versions" opens the County to future requirements in the Permit without adequate review. These requirements could limit credit for practices that are already underway or in the Capital Improvement Program, require that the County change its restoration strategy mid-permit, cost the County substantially more money, and/or impair the County's ability to comply with its Permit.

Should changes be made mid-permit, the effect on the County's ability to comply with the Permit could be affected.

Omission of the Equivalency concept in the WIP

Omission of the equivalency concept in the permit from Maryland's Watershed Implementation Plan for the Chesapeake Bay TMDL is impracticable because it affects the **current ability to finance the permit.** The Draft Permit also omits the equivalency concept included in the Phase I and II WIPs ("The strategy requires reductions in nutrients and sediment ***equivalent*** to retrofitting 30% of the pre-1985 impervious cover…").[13] Permittees must be allowed to comply with the restoration requirement using an alternative approach; otherwise, the state's cost estimates are flatly wrong. According to the Phase II WIP, MS4s will be allowed to plan for implementation using "alternative stormwater management practices that may include street sweeping, catch basin cleaning, storm drain vacuuming, nutrient management, grass/meadow buffers, stream restoration, impervious surface removal, tree planting, shore line erosion control, and impervious area disconnects, when cost effective."[14]

Equivalency should also allow for trading verified nutrient reduction credits and impervious area credit for stormwater restoration performed outside of the MS4 permit area, but the Draft Permit explicitly prohibits that compliance method by requiring all work to be performed within the MS4 boundary. The concepts of equivalency and trading should be specifically referenced in all Phase I MS4 Permits. These options could provide for a cost savings on the restoration requirement of up to 79% with trading between regulated stormwater, significant Point Sources, and Agricultural Nonpoint Sources inside of the Potomac Tributary Basin within the State of Maryland, according to a May 2012 Chesapeake Bay Commission report[15].

MEP

The County's MEP is:

Recommendation 1: MS4 Boundary

Neither MDE's WMA's definition of the MS4 boundary in the Draft Fact Sheet nor the definition used by MDE's SSA to establish local targets under the Chesapeake Bay Total Maximum Daily Load is consistent with the definition of an MS4 described in federal law. MDE's two different definitions of the MS4 are substantially larger than the definition in the Federal Register. In the MDE definition put forth in the Draft Fact Sheet for the permit, MDE equates the jurisdictional boundary with the regulated permit area. In the SSA version, the MS4 includes census –designated urban areas that include agriculture. The MS4 is, in fact, defined by the drainages

[13] Final Phase I WIP at ES-15; Final Phase II WIP at App. A-10 (emphasis added).
[14] Final Phase II WIP at App. at A-11.
[15] Nutrient Trading for the Chesapeake Bay An Economic Study. Chesapeake Bay Commission May 2012. Included as Appendix P

from the storm sewer system owned or operated by the municipal system. Areas with no existing stormwater treatment and/or areas that do not drain to the County-owned and/or operated municipal MS4 should be excluded from the County's municipal MS4 boundary and should therefore not be regulated. MDE should use the description of the MS4 provided by federal law.

Recommendation 2: Implementation Schedule for the Development of the Watershed Assessments and Restoration Plans

The County recommends that MDE revise the Restoration Plan requirement in Permit Part IV.E.2 to allow for development of an Implementation Plan by the end of year one of the permit term. The Plan will prioritize the watershed assessments, identify a suite of BMPs to be used to address the restoration/retrofit requirement, and propose an estimated schedule for implementation of restoration/retrofit projects. A detailed restoration plan will be developed for each watershed using the findings from the completed watershed assessment. The County will submit updates and/or revisions to the Implementation Plan with each Annual Report submission.

Recommendation 3: Impervious Area Restoration Requirements

The *Stormwater Accounting Guidance* document should not be referenced in the permit. The permit should contain a per cent reduction requirement that reflects the maximum amount of restoration practicable. MDE must allow for trading to accomplish the goals of the permit at a cheaper cost that are "equivalent to" stormwater retrofits. Restoration requirements should apply to development within the MS4 permit area, and not beyond. Restoration requirements should be applied to county-owned infrastructure and not privately owned infrastructure except during development and redevelopment. Restoration should only apply to pre-1985 development within the MS4, consistent with the requirements of the Phase I and Phase II WIPs.

Permit Part IV.E.3 – Public Participation

Impracticable Permit Task

Part of Permit Part IV.E.3. is determined to be impracticable because of **Impossibility.**

The text from the Draft Permit is as follows: *"Frederick County shall provide continual outreach to the public regarding the development of its watershed assessments and restoration plans."*

Discussion

It is impossible to ***continually*** provide outreach.

MEP

The County's MEP is:

Frederick County shall provide ~~continua~~l outreach to the public regarding the development of its watershed assessments and restoration plans.

Permit Part IV.E.4 – TMDL Compliance

Impracticable Permit Task

Legal issues with this task are discussed in the Comments. This task is determined to be impracticable because of **Impossibility.**

The text from the Draft Permit is as follows:

4. "TMDL Compliance

Frederick County shall evaluate and document the progress toward meeting all applicable stormwater WLAs included in EPA approved TMDLs. An annual TMDL assessment report with tables shall be submitted to MDE. This assessment shall include complete descriptions of the analytical methodology used to evaluate the effectiveness of the County's restoration plans and how these plans are working toward achieving compliance with EPA approved TMDLs. Frederick County shall further provide:

a. Estimated net change in pollutant load reductions from all completed structural and nonstructural water quality improvement projects, enhanced stormwater management programs, and alternative stormwater control initiatives;

b. A comparison of the net change in pollutant load reductions detailed above with the established benchmarks, deadlines, and applicable stormwater WLAs;

c. Itemized costs for completed projects, programs, and initiatives to meet established pollutant reduction benchmarks and deadlines;

d. Cost estimates for completing all projects, programs, and alternatives necessary for meeting applicable stormwater WLAs; and

e. *A description of a plan for implementing additional watershed restoration actions that can be enforced when benchmarks, deadlines, and applicable stormwater WLAs are not being met or when projected funding is inadequate."*

Discussion

Preliminarily, from a purely operational perspective, the County submits that it is not possible to provide this report on a yearly basis. This is an extensive exercise that would require hundreds of hours of staff time each year. The County suggests that the requirement be for the five year permit cycle. A five year reporting requirement would acknowledge the enormity of the underlying task, addressing all applicable TMDLs, and allow the County to prioritize its restoration efforts, which will result in real pollutant load reductions, over paperwork.

As noted above, the County has serious concerns regarding its ability to comply with the Watershed Assessments and Restoration Plans sections of the Draft Permit. We believe these sections are well beyond our MEP, and therefore object to MDE including them in the final permit without significant revision. According to MDE's new TMDL Data Center, the County's MS4 has 14 local TMDLs (some with aggregated WLAs) for bacteria (Double Pipe Creek, Lower Monocacy River, Upper Monocacy River), phosphorus (Catoctin Creek, Double Pipe Creek, Lower Monocacy River, Upper Monocacy River, Lake Linganore), and TSS (Catoctin Creek, Double Pipe Creek, Upper Monocacy River, Lower Monocacy River, Potomac River Montgomery County, and Lake Linganore). A list of these TMDLs provided by MDE for Frederick County is in Appendix X. To provide a perspective on the level of effort involved in the planning and restoration effort, the County also provides a list of *Stormwater WLAs for County Storm Sewer Systems in Frederick County* from MDE's TMDL Data Center in Appendix X. Notably absent is the TMDL for Lake Linganore, which has sediment and phosphorus reductions that exceed the requirements of the Bay TMDL.

The pounds of phosphorus to be removed from local TMDLs significantly exceed the Bay goals and must be addressed iteratively. Frederick County also made substantial comments in its August 14, 2012 letter to MDE regarding technical issues with MDE's draft Phosphorus TMDLs; these comments are included as Appendix Y. The County has not attempted to estimate the costs of the local TMDLs in this analysis but notes that The WLAs for Lake Linganore are missing and that the reductions are many times the phosphorus and sediment targets in the Maryland WIP for Frederick County and impracticable to complete within the permit cycle given the costs

associated with the Bay TMDL restoration requirement described below. Addressing the Bay TMDL becomes a "super-priority" for the County, limiting our ability to address local TMDLs.

The costs for stormwater from MDE's WIP plan for all regulated entities in Frederick County[16] are calculated to be $1,503,450,109 to reduce 7,197 pounds of phosphorus and 87,170 pounds of nitrogen, including a cost from 2010-2017 of $790,179,732 and a cost from 2017-2025 of $713,270,376. Notably, the target to treat 30% of the pre-1985 development in the WIP (which includes 10% previously completed) as discussed in the previous section, is overshadowed by the WIP nutrient reduction target for Frederick County. To calculate this cost, staff used BMPs from MDE's "Maryland Phase II WIP Strategies: Frederick"[17] and multiplied the number of units for each BMP by unit costs for impervious acres from King and Hagan in Appendix BB. King and Hagan prepared estimates for MDE to go with the Maryland Assessment Scenario Tool that they used to develop scenarios. These numbers are conservative, as they use MDE's own estimates. To convert nonstructural practices from restoration acres in MDE's plan to impervious acres in the King and Hagan report, staff used conversions from MDE's *Stormwater Accounting Guidance* in Appendix U.

Costs are 20-year costs at a net present value. BMPs include all future stormwater restoration within Frederick County in Maryland's plan, including municipal, state, federal, county-owned and unregulated urban land. It is estimated that the cost to Frederick County Government would be about 43.4% of this cost. This amounts to $342,938,004 by 2017, estimated to be the end date for the next permit cycle, and $309,559,343 between 2017 and 2025, for a total of $652,497,347 by 2025. These costs are just for Frederick County Government to meet the local targets for nutrient reductions in the Chesapeake Bay TMDL WIP and do not include local TMDLs.

MEP

The County's MEP is:

5. "TMDL ~~Compliance~~ Reporting

Frederick County shall evaluate and document the progress toward ~~meeting~~ addressing all applicable stormwater WLAs included in EPA approved TMDLs. A~~n annual~~ TMDL assessment report with tables shall be submitted to MDE by the end of the permit term. This assessment shall include complete descriptions of the analytical methodology used to evaluate the effectiveness of the County's restoration plans ~~and how these plans are working toward achieving compliance with EPA approved TMDLs~~. Frederick County shall further provide:

a. Estimated net change in pollutant load reductions from all completed structural and nonstructural water quality improvement projects, enhanced stormwater management programs, and alternative stormwater control initiatives;

b. A comparison of the net change in pollutant load reductions detailed above with ~~the established benchmarks, deadlines,~~ and applicable stormwater WLAs;

c. Itemized costs for completed projects, programs, and initiatives; and ~~to meet established pollutant reduction benchmarks and deadlines;~~

d. Cost estimates for ~~completing~~ all projects, programs, and alternatives ~~necessary for meeting applicable stormwater WLAs~~ to be undertaken during the following year.~~; and~~

~~e. A description of a plan for implementing additional watershed restoration actions that can be enforced when benchmarks, deadlines, and applicable stormwater WLAs are not being met or~~

[16] Frederick County's Local Area Analysis for the Chesapeake Bay TMDL is presented in Appendix Z
[17] Maryland's Phase II WIP Strategies: Frederick is presented in Appendix AA

~~*when projected funding is inadequate."*~~

Permit Part IV.G.2 – Program Funding

Impracticable Permit Task

Part IV.G.2 is impracticable because of the **Current Ability to Finance the Program**.

The impracticable text is as follows:

"2. Adequate program funding to comply with all conditions of this permit shall be maintained. Lack of funding does not constitute a justification for noncompliance with the terms of this permit."

Discussion

This item is discussed in great detail in Section III: Current Ability to Finance the Program.

MEP

The County's MEP is:

See Section III: Current Ability to Finance the Program.

Permit Part V.A – Annual Reporting

Impracticable Permit Task

Permit Part V.A. is determined to be impracticable because of **Implementation Schedules.**

The impracticable language in the section is as follows: "2. To enable MDE to evaluate the effectiveness of permit requirements, the following information shall be submitted in a format consistent with Attachment A".

Discussion

Attachment A is in draft. The updated data requirements are extremely complicated, as shown in Maryland Department of the Environment NPDES Geodatabase Design and Guide Prepared by: Maryland Environmental Service April 2013, and NPDES Database Diagram presented as Appendix CC. Additional changes are anticipated; to instantly update enterprise databases once these requirements are updated is not possible; the problem is a scheduling issue. At least one year should be given to implement the database requirements once finalized.

MEP

The County's MEP is:

To enable MDE to evaluate the effectiveness of permit requirements, the following information shall be submitted in a format consistent with Attachment A. If MDE revises Attachment A during the course of this permit term, the County will be given 12 months from the revision to update its systems consistent with the new approach:

Permit Part VI.A – Chesapeake Bay Restoration by 2025 (Task: Special Programmatic Conditions) and Part VI.B – Comprehensive Planning (Task: Special Programmatic Conditions)

Impracticable Permit Task

Permit Parts VI.A and VI.B are considered to be impracticable because of **Impossibility.**

The language in the Draft Permit is as follows:

"A. Chesapeake Bay Restoration by 2025
A Chesapeake Bay TMDL has been developed by the EPA for the six Bay States (Delaware, Maryland, New York, Pennsylvania, Virginia, and West Virginia) and the District of Columbia. The TMDL describes the level of effort that is necessary for meeting water quality criteria and restoring Chesapeake Bay. The TMDL is an aggregate of nonpoint sources or the load allocation (LA) and point sources or WLA, and a margin of safety. The State is required to issue NPDES permits to point source discharges that are consistent with the assumptions of any applicable TMDL, including those approved subsequent to permit issuance.

Urban stormwater is defined in the CWA as a point source discharge and will subsequently be a part of Maryland's WLA. The NPDES stormwater permits can play a significant role in regulating pollutants from Maryland's urban sector and in the development of Chesapeake Bay Watershed Implementation Plans. Therefore, Maryland's NPDES stormwater permits issued to Frederick County and other municipalities will require coordination with MDE's Watershed Implementation Plan and be used as the regulatory backbone for controlling urban pollutants toward meeting the Chesapeake Bay TMDL by 2025.

B. Comprehensive Planning
The County shall cooperate with other agencies during the completion of the Water Resources Element (WRE) as required by the Maryland Economic Growth, Resource Protection and Planning Act of 1992 (Article 66B, Annotated Code of Maryland). Such cooperation shall entail all reasonable actions authorized by law and shall not be restricted by the responsibilities attributed to other entities by separate State statute, including but not limited to reviewing and approving plans and appropriating funds."

The Draft Fact Sheet explains the Special Programmatic Conditions in the Draft Permit in the following way:

"Frederick County will be required to coordinate with the Chesapeake Bay TMDL. The County will also continue to work toward the completion of the State's Water Resources Element as required by the Maryland Economic Growth, Resource Protection and Planning Act of 1992 (Article 66B, Annotated Code of Maryland). The projects and programs proposed under this draft permit, as well [as] those implemented during the County's previous stormwater permits and as a part of the other State and local regulations all work toward meeting both of these conditions."

Discussion

The "Chesapeake Bay Restoration by 2025" section of the Draft Permit states that all NPDES stormwater permits will "require coordination" with the State's WIPs for the Bay TMDL and meet the requirements of the State's Water Resource Element requirement. In addition, per the special condition in Part VI.B, the County will be required to cooperate with other agencies during the completion of the Water Resources Element required by state law.

The County is concerned that the Draft Fact Sheet accompanying the permit inappropriately implies that the County itself, and not merely the regulated MS4, must coordinate with the Bay TMDL. As EPA has made clear, local plans developed by the state's counties are only plans with "targets" for compliance, due in large part to the fact that the Bay TMDL models are not reliable at such a fine scale. Local plans do not bind the locality as a whole to implement the ideas included therein. As noted above, EPA has stated that federal stormwater regulations do "…not regulate the county, city, or town." Rather, they regulate the MS4. In sum, neither EPA nor the state have the authority through the MS4 permit to mandate that the County as a whole make pollutant reductions to address Bay TMDL targets.

Furthermore, in the Draft Permit itself, the County objects to including what could be viewed by some as an end date for Bay restoration. Part VI.A of the Draft Permit is called "Chesapeake Bay Restoration by 2025," and the last sentence of the section states that "Maryland's NPDES stormwater permits issued to Frederick County and other municipalities will require coordination with MDE's Watershed Implementation Plan and be used as the regulatory backbone for controlling urban pollutants toward meeting the Chesapeake Bay TMDL by 2025." EPA has acknowledged in federal litigation that the TMDL does not mandate a federal timeline for implementation.[18] Rather, members of the Executive Council chose this target date voluntarily, and it can be adjusted if a Bay state so desires. As noted above, the County has determined through this analysis that compliance with the 20% restoration requirement for this permit cycle is impracticable. It stands to reason that implying that the County's MS4 will be compelled to address the Bay TMDL fully by 2025 is an impossibility. MDE has no legal authority for attempting to bootstrap a voluntary timeframe into an enforceable federal permit term.

For this reason alone, it does not belong in any of the state's MS4 Permits. Additionally, MDE has no basis for concluding that the County is capable of actually implementing the kinds of substantial clean-up measures included in the Phase I and Phase II WIPs by 2025. As a matter of principle, an MS4 permittee should not be asked to agree to a Permit term unless it believes that it can comply with that term.

Lastly, the County highlights the fact that even though urban stormwater is one of the Bay source sectors that must make reductions, Maryland's MS4s were not assigned individual WLAs by EPA in the Final TMDL (WLAs were expressed in aggregate). Arguably, this was the only reasonable way to establish WLAs for the state's MS4s, given the spate of concerns expressed regarding the accuracy of the model at a finer-scale. Most importantly, the local targets described above are merely part of a useful local planning exercise, and should not be construed as the WLAs for the MS4 because they are <u>not</u> included in EPA's Final TMDL.

Likewise, Part VI.B (Comprehensive Planning) would mandate that the County *"…cooperate with other agencies during the completion of the Water Resources Element (WRE) as required by the Maryland Economic Growth, Resource Development and Planning Act of 1992 (Article 66B, Annotated Code of Maryland)."* Cooperation "shall entail all reasonable actions authorized by law." The County is required by state law to comply with the WRE planning. However, the requirements of the WRE state statute are far beyond the requirements of the federal CWA, and could subject the County to EPA enforcement or citizen suits for any alleged failure to "cooperate" in

[18] EPA has stated that: "contrary to Plaintiffs' assertion, EPA did not 'establish[] a federal timeline for implementation.' Pl. Opp'n at 14, 17. The 2025 implementation target is the Partnership's target, not EPA's alone." EPA's Memorandum in Support of EPA's Cross-Motion for Summary Judgment at 15, Am. Farm Bureau Fed'n v. EPA, No. 1:11-cv-00067-SHR (M.D.Pa. June 20, 2012).

planning. Worse, this requirement would usurp legislative discretion by mandating that the governing body take "all reasonable actions authorized by law," thereby allowing MDE, EPA and citizens to second guess decisions on local matters.

MEP

The County's MEP is:

[SECTION ELIMINATED]

Part III: Current Ability to Finance the Program

Current Permit Costs

Frederick County's total estimated 5-year cost to implement its current Permit is $12,428,322. This includes $11,129,551 in operating costs and $1,298,771 in restoration costs.

Frederick County has implemented the current Permit conditions for the past 12 years, because the current Permit was administratively extended in March 2007. Many tasks span more than one year; therefore, the County developed a methodology to calculate an estimated 5-year cost using budget numbers from the 10 years of Permit compliance leading up to FY'2012. A description of the methodology can be found in Appendix DD. The estimated 5-year costs include expenditures for both County staff and Consultants. All funds for the current program come from County General Funds generated from tax revenues.

A full breakdown of costs by task is provided in Table 11.

Draft Permit Costs

The estimated five year cost of the permit operations is estimated to be $15,568,509. This number is based on an analysis of the costs of tasks under the previous permit that are also included in the draft permit, plus rough cost estimates for future tasks in the draft permit provided by Versar, Inc., a national consulting firm with experience with MS4 permits, including Frederick County's. Estimations of operating costs are provided in Appendix DD.

Using the map of the MS4 that was developed by Frederick County GIS staff using the requirements in MDE's Draft Fact Sheet, the amount of restoration needed to meet the 20% retrofit of untreated urban impervious area in the next permit is 1815 acres. Staff developed a restoration scenario in MDE's Maryland Assessment Scenario Tool [Appendix EE] designed to meet the number of required acres; attention was paid to the most cost effective practices and the number of acres available for each practice. Staff had to convert the number of acres of restoration in the MAST tool to impervious acres to get to 1815 acres. Staff then applied costs per impervious acre from the King and Hagan study commissioned by MDE [Appendix BB] and projected timeframes for each project type based on experience with past projects and the timeframes for county budgeting and procurement. The cost of the requirement to restore 20% of the county's untreated urban impervious area was estimated to be $95,959,482. Table 4 below shows the scenario built by Frederick County staff to meet the draft permit requirements. Costs are 20-year life cycle costs at a net present value in FY'12 dollars. Note that the Stormwater Accounting Guidance dated August 2014 was released by MDE after this initial analysis, and that the Urban Nutrient Management BMP was eliminated. Changes to this scenario and updated cost projections to the midpoint of the permit (FY'17) were done as part of the work of Brown and Caldwell, described in Section III. Frederick County notes that these all estimates could change with new information, and that the permit requirements are based on compliance activities.

Table 4: Costs and Acres treated for 20% restoration requirement from MDE Stormwater Program Defined MS4 and June 2011 Stormwater Accounting Guidance

BMP Name	Unit	Stormwater Accounting Guidance Conversion	Draft Permit Units	Draft Permit Impervious Acres	Cost for 20-yr Life Cycle per Impervious Acre	Draft Permit Cost (20 year NPV)
Bioretention/raingardens*	Ac.	100%	2	2	$217,370	$434,740
Bioswale	Ac.	100%	200	200	$62,620	$12,524,000
Dirt and Gravel Road Erosion and Sediment Control	Ac.	100%	0.7557	0.7557		$0
Dry Detention Ponds and Hydrodynamic Structures**	Ac.	0%	0	0	$112,620	$0
Dry Extended Detention Ponds***	Ac.	0%	0	0	$97,120	$0
Impervious Urban Surface Reduction	Ac.	62%	0.05	0.031	$163,957	$5,083
MS4 Permit - Stormwater Retrofit****	Ac.	100%	100	100	$97,120	$9,712,000
Urban Filtering Practices	Ac.	100%	50	50	$88,620	$4,431,000
Urban Forest Buffers	Ac.	34%	60	20	$57,207	$1,167,023
Urban Infiltration Practices	Ac.	100%	0	0	$84,370	$0
Urban Tree Planting: Urban Tree Canopy	Ac.	38%	150	57	$207,207	$11,810,799
Vegetated Open Channel – Urban	Ac.	100%	0	0	$38,207	$0
Wet Ponds and Wetlands	Ac.	100%	200	200	$81,251	$16,250,200
Street Sweeping	Tons	40%	2,073.5	829	$15,079	$12,508,031
Urban Nutrient Management	Ac.	9%	1,180	106	$61,620	$6,544,044
Urban Stream Restoration/Shoreline Erosion Control	Linear Feet	100	25,000	250	$82,320	$20,580,000
Total				**1815**		**$95,966,920**

All acres of implementation from MDE WIP converted to impervious acres using Maryland's "Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated Draft June 2011" document. All costs from Dennis King's "Use of Planning Level Unit Stormwater BMP Costs with MAST Output to compare WIP Alternatives": Planning Level Unit Cost Development for Stormwater Management Best Management Practices (BMPs) Part 4: Integrating Unit Stormwater BMP Costs with MAST Output

*Bioretention (Retrofit - Highly Urban) cost data used from King Report.

**Dry Detention Ponds (New) and Hydrodynamic Structures (New) are listed separately with different costs in King Report. Used Hydrodynamic Structure Cost data.

***Used Dry Extended Detention Ponds (New) cost data from King Report.

****Used Dry Extended Detention Ponds (Retrofit) cost data from King Report

The costs and timeframes were subjected to review by Brown and Caldwell, a nationally recognized engineering firm, under contract to AquaLaw, the County's outside legal counsel on stormwater matters. Brown and Caldwell's report, is provided as Appendix L. Brown and Caldwell made recommendations to replace certain BMPs with others, change timeframes for execution based on permitting and other issues, modify cost projections for some BMPs, include projects from the existing CIP, and adjust dollars to FY'17 as the midpoint of the permit.

Brown and Caldwell estimated the cost of the 20% restoration requirement at $126,777,501.

Brown and Caldwell estimated the full cost of the Draft Permit, including the 20% restoration requirement, to be $142,346,010.

Using Brown and Caldwell's schedule, not all projects can be completed within the five years of the permit. Brown and Caldwell's projections indicate that the full 20%, or 1815 acres, of impervious area restoration would not be possible to complete in the five year permit; a maximum of 1,311 acres would be physically possible to complete in the timeframe.

BC's projections do show commencement of construction on all 1815 acres; however, the permit requires that permittees commence and complete restoration in the permit timeframe. Thus, the full 20% retrofit cannot be completed in the five year permit and requires an additional fiscal year.

Detail on cost and scheduling estimates was provided to Municipal and Financial Services Group, under contract by AquaLaw, for an evaluation of the cost per ratepayer using the county's existing stormwater remediation fee structure. MFSVG projected the costs that would be incurred during the permit term into a financial model [Appendix M].

MFSVG states that *"It is obvious that the generic schedules developed by the County's consulting engineers that would be necessary to complete the 20% impervious surface restoration implementation would take more than five years. The cost and rate estimates in the remainder of this report use a six year projection period (FY 2015 through FY 2020) that reflects this fact."* The costs that would be incurred executing the draft permit during FY'15-FY20 period would be $104,852,801.

Table 5: Projected Draft Permit Costs Per Year of Permit

Permit Costs	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
CIP-Related Total	$11,023,248	$3,992,487	$2,828,318	$33,554,368	$2,759,192	$38,745,566
Total Operating	$3,113,702	$3,113,702	$3,113,702	$3,113,702	$3,113,702	
Total MS4 Expenditures	**$14,136,950**	**$7,106,189**	**$5,942,020**	**$36,668,070**	**$5,872,894**	**$38,745,566**

Applying a consistent stormwater utility rate across this time period to fund the cost of the draft permit from FY'15-FY'20, MFSVG determined that the cost per account to implement the Draft Permit for the existing 49,485 current ratepayers affected by the stormwater remediation fee would be $462 per year.

This number represents a 400% increase over the $108 per ratepayer equivalent that is budgeted in Fiscal Year 2015. Note that the program is currently funded through property taxes and comes from the general fund. MFSVG cited that $467 per account is about 752% higher than the average of the over 1300 utilities surveyed in 2013 by the Western Kentucky University and that "this fee would be one of the highest in the country if implemented immediately in the current fiscal year." They suggested a 15% governing rate increase based on their professional experience with setting utility rates for municipal governments across the country.

Table 6: Exhibit 6. Stormwater Fee Projection

	Projected FY 2015	Projected FY 2016	Projected FY 2017	Projected FY 2018	Projected FY 2019	Projected FY 2020
Total MS4 Projected Funding	$14,136,950	$7,106,189	$5,942,020	$36,668,070	$5,872,894	$38,745,566
Planned Funding	$5,349,840	$5,403,338	$5,457,372	$5,511,946	$5,567,065	$5,622,736
Total Funding Needed	**$19,486,790**	**$12,509,528**	**$11,399,392**	**$42,180,016**	**$11,439,959**	**$44,368,302**
Breakeven MS4 Annual Fee per Customer	**$394**	**$250**	**$226**	**$827**	**$222**	**$853**
% Change	264%*	(-36%)	(-10%)	266%	(-73%)	284%
Six Year MS4 Average Fee per Customer	***$462***	***$462***	***$462***	***$462***	***$462***	***$462***

MEP Costs

MFSVG also determined a reasonable initial fee based on the County's current expenditures on its NPDES MS4 permit. The estimated budget for NPDES tasks in the FY'15 operating budget for Frederick County is $5,349,840. This includes capital projects and operating expenses.

The MEP cost is determined to be $46,959,626 in FY'17 dollars based on the current fiscal year funding with a per year escalation rate of 15%. The cost per ratepayer is $108 in Fiscal Year 2015 consistent with the current FY'15 budget from the general fund and escalates to $217 per ratepayer in Fiscal Year 2020.

Table 7 below, taken from Exhibit 7 in the MFSVG report, shows the projected amount of fee per year over six fiscal years for two scenarios and compares them to the National Average Stormwater Utility Cost. The first scenario starts with the general funds expended by the County in the current fiscal year and applies 15% escalations per year, which is determined to be the MEP. The current year fee is almost twice the national average. The second scenario averages the cost per year of the full draft permit to create an average fee per year of $462.

Table 7: Exhibit 7. Projected Fees w/ 0% Increases vs. 15% Increases vs. Full MS4 Funding

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
National Average Stormwater Utility Annual Cost	$58	$60	$62	$64	$65	$67
Annual Escalator	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
15% Increases per year Fees	**$108**	**$124**	**$143**	**$164**	**$189**	**$217**
Assumed Increase	N/A	15%	15%	15%	15%	15%
% of National Average	186%	207%	232%	259%	289%	322%
Annual Revenue Generated	**$5,349,840**	**$6,213,839**	**$7,217,374**	**$8,382,980**	**$9,736,831**	**$11,309,330**
MS4 Funding Annual Fees (six year average)	**$462**	**$462**	**$462**	**$462**	**$462**	**$462**
% of National Average	794%	771%	749%	727%	706%	685%
Annual Revenue Generated	**$22,865,873**	**$23,094,532**	**$23,325,477**	**$23,558,732**	**$23,794,320**	**$24,032,263**

Staff used these numbers to develop yearly budget projections for the Maximum Extent Practicable scenario to execute the Draft Permit. Table 8 breaks permit costs into CIP-Related and Total Operating.

Table 8: Projected MEP Costs Per Year of Permit

MEP Costs	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
CIP-Related Total	$2,595,847	$3,417,528	$4,615,063	$5,880,669	$7,234,520	$8,898,108
Total Operating	$2,754,043	$2,796,311	$2,602,311	$2,502,311	$2,502,311	$2,411,222
Total MS4 Expenditures	**$5,349,890**	**$6,213,839**	**$7,217,374**	**$8,382,980**	**$9,736,831**	**$11,309,330**

Staff then modified the schedule of projects developed by Brown and Caldwell for each fiscal year using the per year caps set by MFSVG. To do this, Staff kept projects that met the MEP amounts in each year and moved projects into future years that exceeded MEP amounts; this was done iteratively for each fiscal year of the permit. In a few instances, when differences were not significant enough to move an entire project or project phase, funds were added or subtracted to a project. The priority was to keep projects that emanated from the existing CIP and cheaper projects like tree plantings, and to move other projects first. **Based on the MEP, Frederick County can commence construction on a total of 532 acres and complete restoration on 416 of those acres during the next permit term.**

The number of acres required to retrofit 20% of the County's untreated urban impervious area according to MDE's Water Management Administration's definition of the NPDES MS4 Boundary in the Fact Sheet is estimated to be 1,815. However, as discussed in the MS4 Boundary section, the number of acres in this definition is neither consistent with the MS4 boundary used by SSA to develop the Watershed Implementation Plan for the TMDL or the MS4 as defined in the Code of the Federal Register.

Table 9 below shows the % goal met depending on which version of the MS4 boundary is used. **Frederick County can commence and complete 416 acres in the permit term. This represents a 13.5% retrofit of the statutorily defined MS4's untreated urban impervious area owned by the County and built without stormwater or built prior to 1985.**

Table 9: Impervious Acres Restored

Scenario	Total Acres in MS4	Total Untreated Impervious Acres	Acres needed for 20% Retrofit Requirements	Percent of Restoration Goal met by restoring 416 acres
MDE WMA MS4	64,663	9077	1815	4.6%
MDE SSA WIP-Defined MS4	48,826	3633	727	11.5%
CFR-Defined MS4 with County-Owned Drainages (untreated areas or areas built prior to 1985)	13,014	3083	617	13.5%

Table 10 reviews the numbers of acres of restoration required by the Draft Permit and commenced and completed under the MEP scenario and is broken down by project type. Frederick County focused on the most cost-effective practices to develop the MEP spreadsheets using BCs analysis as the basis.

Table 10: Acres Required by Draft Permit, and Commenced and Completed under MEP

Projects	MEP Permit Impervious Acres Completed	MEP Permit Impervious Acres Commenced	Draft Permit Impervious Acres Required
Bioretention New	0	0	49.95
Bioretention Highly Urban	0	0	49.95
Bioswale New	0	0	52.36
Bioswale Highly Urban	0	0	42
SW Retrofits	177	207	307
Urban Forest Buffer	18.36	20.4	20.4
Urban Filtering Practices	0	0	48
Urban Tree Planting	75.24	159.6	164.16
Street Sweeping	55	55	829.5
Stream Restoration	90	90	252
Total	**415.73**	**532.13**	**1815.35**

Table 11 below is a breakdown of costs for each task in the existing, draft and MEP permits. The Current Permit Cost $12,428,322, the Draft Permit is estimated to cost $142,316,010 and the MEP Permit is estimated to cost $46,959,626.

Table 11: Cost Comparison by Task for Frederick County's Current Permit, Draft Permit, and MEP

Permit Tasks	Existing Costs	MEP Costs	Draft Permit Costs	Notes
GIS Mapping	$508,665	$508,665	$508,665	
NPDES Permit Monitoring	$1,034,812	$1,459,037	$1,459,037	
MD 2000 Stormwater Manual	$864,581	$864,581	$864,581	
Stormwater Management Program	$2,532,573	$2,532,573	$2,532,573	Proposed costs remain the same at this time because of an unknown additional amount of effort required in the future to meet increased inspections, verification, etc. for ESD practices.
E&S Control				
IDDE & Spill Response Program	$301,177	$362,386	$362,386	We've kept County staff costs the same but realize that this is a minimum number. The IDDE program will have to expand to meet the conditions of the proposed Permit but it is difficult to estimate at this time. We are saying that it is not practicable because of the requirement to inspect commercial/industrial areas.
Outreach & Education	$49,952	$49,952	$49,952	All other County outreach & education costs are incorporated into the General Permit Compliance costs
Litter & Floatables	NA	$0	$0	Staff time in managing this task is incorporated into the General Permit Compliance costs.
Property Management	$4,314,534	$3,995,251	$3,995,251	Costs for street sweeping for the Draft Permit ($12,508,031) and MEP ($588,081) are reflected in restoration costs. The current cost ($420,820.60) is included in operating.
Road Maintenance				
Herbicide/Pesticide/Fertilizer Use				
NPDES Industrial Discharge Permitting	$44,767	$89,358	$89,358	
Watershed Assessments and Restoration Plans	$211,303	$1,761,006	$1,761,006	MEP reflects draft permit costs minus $600,000 for the TMDL Assessment in year one.

Permit Tasks	Existing Costs	MEP Costs	Draft Permit Costs	Notes
TMDL Compliance	$0.00	$45,000	$45,000	
Program Funding	N/A	N/A	N/A	
Annual Report and Database Management	$260,724	$340,724	$340,724	
Special Programmatic Conditions	See note	See note	See note	Costs associated with this task are incorporated into General Permit Compliance costs. Additional costs associated with project construction are incorporated into Implementation & Tracking of Restoration Efforts.
General Permit Compliance	$1,006,464	$3,559,977	$3,559,977	Miscellaneous operating costs (i.e. outreach materials, staff mileage, training, etc) plus salary and fringe for staff managing overall Permit compliance. Costs are a minimum estimate that include current staff (one Project Manager IV and one PMIII) cost plus three proposed staff (one PMII, two Watershed Planners and one Administrative position) plus an average 5-year operating miscellaneous cost
Subtotal Operating Costs	**$11,129,551**	**$15,568,510**	**$15,568,510**	
Implementation & Tracking of Restoration Efforts	**$1,298,771**	**$31,391,116**	**$126,777,500**	All costs of restoration requirement minus street sweeping (captured in road maintenance)
ESTIMATED TOTAL	**$12,428,322**	**$46,959,626**	**142,346,010**	Total costs

Sage Policy Group, under contract to AquaLaw, conducted an analysis of the costs of the draft permit. They evaluated total economic impacts in Frederick County associated with alternatives to NPDES permit compliance using IMPLAN. They put forth three alternatives using an estimated $107M in eligible permit costs, the estimated cost of the draft permit from FY'2015-FY'2020. (Their numbers differ slightly from MFSVG estimates because they projected operating tasks from FY'12 dollars to FY'17 dollars):

1. Frederick County Government expending the funds on other services like schools and public safety;
2. Frederick County taxpayer/citizen spending for this same amount;
3. Frederick County Government expenditures on other services like schools and public safety using this same amount. The difference between this and the permit scenario is largely whether the funds are spent in Frederick County or elsewhere.

Three types of economic impact were evaluated for the draft permit costs:

- Years of work (full-time and part-time jobs)
- Income (millions of 2017 dollars)
- Business sales (millions of 2017 dollars)

Table 12 below shows that the permit is expected to generate 334 job years, $16.8M income in 2017 dollars, and $47.2M in business sales. The table below shows the projections for each scenario.

Table 12: Exhibit 6. Total economic impacts in Frederick County associated with alternatives to NPDES permit compliance: fiscal years 2015 –2020

Type of impact	*Additional Frederick County services*	*Frederick County taxpayer/resident spending*	*NPDES permit compliance*
Years of work (full-time and part-time jobs)	1,153	717	334
Income (millions of 2017 dollars)	$60.9	$25.5	$16.8
Business sales (millions of 2017 dollars)	$197.7	$78.5	$47.2

According to Sage, *"The analysis outlined above illustrates that the requirement to comply with the NPDES permit requirements will have real, quantifiable opportunity costs for Frederick County. Either using these funds for other County government services or returning them to taxpayers in the county results in substantially more jobs in the county as well as other economic benefits."*

The Opportunity costs from the permit scenario versus the two other scenarios are presented in the Table 13 below, that reproduces Exhibit 7 from the report:

Table 13: Exhibit 7. Opportunity Cost: Total additional economic impacts in Frederick County

Type of impact	*Additional Frederick County services*	*Frederick County taxpayer/resident spending*
Years of work (full-time and part-time jobs)	819	383

Income (millions of 2017 dollars)	$44.1	$8.6
Business sales (millions of 2017 dollars)	$150.5	$31.3

According to Sage, *"If the $107 million were allocated to tax relief, the county's economy would support an additional 383 jobs once one fully considers multiplier effects. Conversely, if the $107 million were spent on other Frederick County services, including on education and public safety, the Frederick County economy would support an additional 819 jobs over that period. Those jobs would be associated with an additional $44 million in worker income and an additional $150 million in local business sales. Returning monies to taxpayers would increase economic impacts although not as dramatically as adding county government services. Taxpayers would not spend all of this new disposable income in Frederick County and their spending would support retail and service-oriented business, which generally do not pay as well as many other sectors of the economy. Nevertheless, these economic benefits are significantly higher than those linked to NPDES permit compliance as reflected in Exhibit 7."*

Conclusion

The full cost of the draft permit is estimated to be $142,346,010, if all terms are able to be met, including the 20% retrofit requirement. Execution of this full amount is not possible due to financial and scheduling reasons. The County Adopted a Clean Water Policy in January 2014, presented in Appendix FF; these impracticable costs and schedules also violate County Policy. The MEP cost is determined to be $ $46,959,626 in FY'17 dollars based on the current fiscal year funding with a per year escalation rate of 15%. The cost per ratepayer is $108 in Fiscal Year 2015 consistent with the current FY'15 budget from the general fund and escalates to $217 per ratepayer in Fiscal Year 2020. Based on the MEP, Frederick County can commence construction on a total of 532 acres and complete restoration on 416 of those acres during the next permit term. Frederick County can execute 22.9% of the 20% retrofit requirement using MDE WMA's definition of the MS4 boundary, and 67.4% of the 20% retrofit requirement using the CFR-Defined MS4 with County-Owned Drainages.

The state's own figures from the Phase II Watershed Implementation Plan (Phase II WIP) confirm that local governments are facing enormous stormwater management costs under MDE's plan, estimated at $2.051 billion through 2017 and $6.272 billion through 2025. The County cannot agree with a state policy (i.e., requiring all MS4 permittees to comply with a numeric restoration requirement) that would impose an unprecedented financial burden that is orders of magnitude beyond our collective abilities to manage.